

1 Amendments to the Claims:

2 This listing of claims will replace all prior versions, and
3 listings, of claims in the application using (Original) (Currently
4 Amended) (New) (Canceled) (Previously Presented) nomenclature, as
5 recited in the below listing of claims.

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7 1. (Currently Amended) A sensor for sensing the presence of a
8 chemical vapor, the sensor adapted for interconnecting to an
9 electrical monitor for measuring a reaction of the sensor to the
10 chemical vapor, the sensor comprising,
11 a positive terminal, the positive terminal being conductive,
12 a negative terminal, the negative terminal being conductive, the
13 terminals adapted for interconnection to the electrical monitor,
14 and
15 a film of organic conductive polymer nanofibers extending
16 between the positive and negative terminal for producing a change
17 in conductivity between the positive terminal and the negative
18 terminal as monitored by the electrical monitor when the film is
19 exposed to the chemical vapor, the conductive polymer nanofibers
20 consist of a single polymer.

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22 2. (Original) The sensor of claim 1 wherein,
23 the positive terminal and the negative terminal are made of
24 gold.

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1 3. (Original) The sensor of claim 1 wherein the positive terminal
2 and the negative terminal are made of gold and the conducting
3 polymer is polyaniline, the sensor further comprising,
4 a thiol surface layer disposed between the terminals and the
5 film.

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7 4. (Currently Amended) The sensor of claim 1 wherein,
8 the polymer nanofibers are selected from the group consisting of
9 polyaniline nanofibers, polypyrrole nanofibers, polythiophene
10 nanofibers, polytoluidine nanofibers, polyanisidine nanofibers,
11 polymethylaniline nanofibers, polyethylaniline nanofibers, poly(2-
12 alkoxyanilines) nanofibers and poly(2,5-dialkoxyanilines)
13 nanofibers.

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15 5. (Original) The sensor of claim 1 wherein,
16 the polymer nanofibers are polyaniline nanofibers, and
17 the chemical vapor is selected from the group consisting of an
18 acid vapor and a basic vapor.

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20 6. (Original) The sensor of claim 1 wherein,
21 the polymer nanofibers have diameters less than 500 nm and
22 lengths less than 10 μm .

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24 7. (Original) The sensor of claim 1 wherein,
25 the polymer nanofibers are polyaniline nanofibers having
26 diameters less than 500 nm and lengths less than 10 μm .

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1 8. (Original) The sensor of claim 1 wherein,

2 the polymer nanofibers are polyaniline nanofibers having
3 distributed diameters of 50 nm.

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5 9. (Original) The sensor of claim 1 wherein,

6 the polymer nanofibers are polyaniline nanofibers having
7 distributed diameters of 30 nm.

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9 10. (Original) The sensor of claim 1 wherein,

10 the polymer nanofibers are polyaniline nanofibers having
11 distributed diameters of 120 nm.

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1 11. (New) A sensor for sensing the presence of a chemical vapor,
2 the sensor adapted for interconnecting to an electrical monitor for
3 measuring a reaction of the sensor to the chemical vapor, the
4 sensor comprising,

5 a positive terminal, the positive terminal being conductive,
6 a negative terminal, the negative terminal being conductive, the
7 terminals adapted for interconnection to the electrical monitor,
8 and

9 a film of organic conductive polymer nanofibers extending
10 between the positive and negative terminal for producing a change
11 in conductivity between the positive terminal and the negative
12 terminal as monitored by the electrical monitor when the film is
13 exposed to the chemical vapor,

14 wherein the positive terminal and the negative terminal are made
15 of gold and the conducting polymer is polyaniline, the sensor
16 further comprising,

17 a thiol surface layer disposed between the terminals and the
18 film.

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20 12. (New) The sensor of claim 1 wherein,

21 the nanofibers have a diameter of less than 500 nm.
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